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THE YEARBOOK ON THE SCIENTIFIC MOVEMENT IN EDUCATION

INTRODUCING THE YEARBOOK[1]

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SOME years ago the board of directors of the National Society for the Study of Education appointed a committee to prepare a yearbook on the science of education. This committee held one meeting and drew up a tentative plan, emphasizing, first, the technical question of the nature and definition of the scientific method as applied to education, and after this the specific applications. The matter rested at this point for several years, when the chairman resigned and suggested that another chairman be appointed. The board of directors then requested the writer (speaker) to propose a plan and a committee. He recommended that the board constitute itself a yearbook committee and produce a Yearbook on the Scientific Movement in Education.

It seemed appropriate that the board itself assume the task of preparing this yearbook, because the purpose of the society is to promote the scientific movement in education and because the yearbooks of the society are the depository of much of the summarization of this movement. The directors accepted the responsibility and present the volume which constitutes Part II of the 1938 Yearbook as an attempt to give a brief account of the outcome of the scientific study of education during the past generation.

The present committee approached the subject in a slightly different way from that followed by the original committee. It has not attempted to formulate a precise definition of the scientific method or to make an abstract or general analysis of its nature. Neither has it been concerned whether education is a science, or whether it is an art or technology which makes use of scientific findings in its procedures and of scientific methods in its investigations. Much space might have been taken up in the discussion of such questions without coming to an agreement and without throwing any light on the contribution which scientific methods have actually made to the improvement of education. Accordingly, the committee determined to give chief emphasis to a description of the concrete ways in which research has actually influenced education during the past generation. This includes a description both of the methods and of the

[1] This and the following three papers were read before the National Society for the Study of Education, on Saturday evening, February 26, at the Atlantic City meeting of the American Association of School Administrators. The program was devoted to a discussion of Part II of the 1938 Yearbook of the society entitled, "The Scientific Movement in Education."

results, but the methods are described specifically and concretely, and not in the abstract. The procedure followed in preparing an account of the scientific movement has been to secure the cooperation of specialists in the preparation of the various parts of the report. Each specialist was given a statement of the general plan and purpose of the yearbook and was asked to prepare a chapter on the field of his special study. This method produces some unevenness in mode of treatment, but it has the advantage of securing authoritative accounts.

The contributions of research to education are classified according to the natural divisions of the educational process considered from a functional point of view. School surveys cover the entire range of educational functions, and hence their contributions are described in a separate chapter. The survey is essentially the application of as precise methods as possible to the measurement of the educational outcomes in a given institution or school system, the comparison of these outcomes with those of other systems, an analysis of the methods, organization, administration, material facilities, personnel and financial resources, in the attempt to evaluate the outcome and to evolve recommendations for improvement. There is no doubt that school surveys have, on the whole, been a strong factor in bringing about improvement.

The study of problems of administration in the United States is made acutely necessary by the magnitude of the educational system and by its rapid development. Historical studies of this development frequently throw light on current issues. Statistical studies, such as the classic studies of retardation and elimination, have revealed conditions previously unsuspected and have pointed to the necessity of reorganization. Tests and surveys have given the administrator more definite knowledge of the conditions in his system than could be secured in any other way. Legal research has laid the foundation for administrative practice.

Many types of studies contribute to the improvement of the training of teachers. Some concern the underlying conditions and some the procedures themselves. Such matters as the demand for teachers, the salaries and the circumstances under which teachers work, the social composition of the teaching body have been studied to advantage. In teacher training, as in many fields, the knowledge of the historical development throws light on current problems. The knowledge of trends is useful to the particular institution as a background for the examination of its own procedures, both trends in the training of teachers and general trends in education itself which prospective teachers will be expected to carry on.

The development of exact methods of determining the curriculum is still going on. The disappointing results of some of the attempts to work out a curriculum on the basis of a detailed analysis of adult activities has led to some skepticism of the possibility of using scientific methods in general in this field. Nevertheless, these methods have actually made considerable contributions to the development of the curriculum, and no curriculum maker would be willing to ignore them. The exact measurement of what pupils actually accomplish gives an important guide as to what we should expect them to accomplish. This applies in general and also in regard to pupils at successive stages of development and to pupils of varying abilities. The knowledge of the nature of the learner, his interests, modes of learning and development, while not an exclusive guide, does give important information as to what is suitable for him. The study of society also, not merely the detailed activities of adults, but the material, cultural, political trends

in contemporary life is an indispensable prerequisite to the attack on the problem of the curriculum. Finally, actual experimentation with various types of curriculum gives an indication of their effectiveness. The possibilities of such types of research have by no means been exhausted, but their value has been demonstrated.

The general methods of conducting the school and carrying on instruction have changed greatly during the past generation. There is still some debate on details, but nobody would advocate the abandonment of the freer and more flexible procedure that has displaced the rigid classroom practice which is rapidly disappearing. This change in practice is at least partly the outgrowth of a conception of the child as a learner and as a growing and developing organism, which in turn grew out of the evolutionary point of view of biological science and of the psychological studies of learning and child development. When the child is thought of as a reacting organism rather than as a receptacle, the teacher's role becomes that of stimulating and guiding rather than of dispensing predigested pellets of knowledge. The definition and measurement of individual differences also leads to an increased focusing of attention on the individual. The shift in general point of view is accompanied by the investigation of a host of questions concerning the adjustment to and stimulation of interest, the direction of learning and the adaptation to individual differences. The investigation of these questions constitutes a large part of the scientific movement in education.

The study of such general questions, which apply to the entire curriculum, is supplemented by detailed inquiry into the problems of learning and instruction in each of the subjects or divisions of the curriculum. The contributions of research to special methods are so numerous that it is difficult to choose from among the numerous examples that come to mind. Each subject now has its standard tests by which the attainment of systems, schools, classes and individuals may be appraised and the progress of pupils may be recorded. An administrator or a teacher would be as lost without the tests as a carpenter without his level or plumb line. In many fields of work the objectives have been more clearly defined by a survey and analysis of social usages, as in the case of spelling. Experiments to discover how children learn have suggested types of emphasis in teaching and methods of diagnosing and treating children who encounter special difficulties in learning, as in the case of handwriting, reading and arithmetic. Many studies have been made comparing the effectiveness of one method with another. Though in many cases the differences are negligible, indicating that details of method are often relatively unimportant, in other cases, such as the use of visual aids, the difference is large and significant. On the question of interest and motivation some investigations have thrown light and have given aid in the selection of subject-matter. Studies of ability and attainment at various ages and grades are helpful in the gradation of subject-matter. Thus many kinds of research contribute in a variety of ways to teaching of the various subjects.

A number of more general procedures, applying to all parts of the curriculum, have been studied intensively during the past generation. The classification of pupils and the individualization of instruction rest largely on the more exact measurement of abilities and of attainment made possible by the invention and use of mental and achievement tests. New and improved methods of discipline and control are suggested by the conceptions of the child's nature and of the way he grows and develops which are derived from psychology and particularly the psychology of childhood and youth. The procedures of gui-

dance rest on a similar background of knowledge of the individual and of the social order to which he must adapt himself.

Following the section of the yearbook which describes the contributions of research to methods and to the more general procedures which have been mentioned, is one which describes the methods and techniques of research. A chapter giving a summary of the trends in problems and methods as represented in the yearbooks of this society is followed by an account of seven so-called general methods and three so-called specific techniques of research. Not all would agree as to the classification of methods or as to the distinction between methods and techniques, but this is unimportant. What is aimed at is a convenient description of the methods and techniques which have been found useful in educational research. It is sufficient, therefore, to describe them under the familiar categories of historical and documentary methods, the social survey, statistical analysis, laboratory experimentation, classroom experimentation, case study, educational diagnosis and the techniques of testing and of observation, rating and the questionnaire. All these are in everyday use.

A distinction is sometimes made between scientific methods and the scientific method. Scientific methods may be taken as any methods of securing or extending knowledge which are objective or exact, relatively if not absolutely. The scientific method may be more narrowly defined as a system of observation or experiment, verification, interpretation and generalization which yields a coherent body of concepts and hypotheses or laws constituting a science. It is doubtful whether education is or can be a science in this sense. This is not to say that experiment, verification, interpretation and some degree of generalization may not be used. But coherent bodies of concepts and laws are to be found in the sciences which support educational theory and practice rather than in education itself. Education is scientific to the degree that educators gather as objectively and exactly as possible the facts they need to guide their procedures, and to the degree that educators make use of the concepts and generalizations of the basic sciences. The policies of education are not automatically dictated by the facts or the sciences, but they must be in accord with them.

It has long been recognized that the science of psychology deals with the very substance of education and that a clear understanding of the nature of behavior and of mental activity can not fail to give indications of the way behavior and thinking may be directed and modified. Some of the problems with which psychologists deal have, to be sure, very indirect and remote connection with the business of the school. It is hard to see how the theories of color vision or of pitch discrimination have much bearing on teaching. But the newer branches of psychology, which were at the outset cultivated largely by educational psychologists, are pregnant with significance. The chief of these are the psychology of learning and of individual differences, mental growth and development and mental hygiene.

These branches are concerned largely with the person as an individual and bear upon the instruction and treatment of the individual in the school. But education is not merely an individual affair. It is supported by and responsible to society, is determined by the culture in which it is carried on and is designed to fit the child to live in the social order of which he is a member. Hence, education must draw largely on the social sciences, particularly sociology and economics. The contributions to education of these sciences as well as of the four branches of psychology are discussed in the yearbook.

The contributions which have been summarized in the way that has been briefly sketched constitute the case for the scien-

tific movement in education. Is the case an adequate one and will the movement continue to go forward through the succeeding generations, or will a reversal in the historical trend put it into the discard, just as science and democracy are being put into the discard in the autocracies of Europe? There are signs of a reaction in education which make this no idle question.

If a reversal does take place it will be due, not wholly to dissatisfaction with the particular outcomes of scientific research, but, as Professor Dewey points out in his chapter also, to a rejection of its presuppositions and to the adoption of a contrary general point of view. The critic of science, instead of picking flaws in particular studies, may merely ask, "what of it?" He regards science, not necessarily as wrong, but as irrelevant. It has contributed and can contribute nothing fundamentally new. The wise men of all the ages can teach us as much as the man most learned in modern science. Science gives a certain type of inferior knowledge, useful in the practical arts, but it can give no insight into the essentially human problems. This is attained by reason and not by the collection of facts. Reason can be exercised by any one with sufficient power of intellect. Acquaintance with the reasoning of great thinkers is the prime means of education; the collection of facts is secondary.

To the believer in modern science this argument makes the fatal error of identifying science with a procedure which is only a single step in the scientific method. No scientist worth his salt thinks that science is merely a collection of facts. To evaluate science by contrasting the thinking of a Plato with the trivialities of the average master's thesis is no fairer than would be the evaluation of philosophy by comparing the work of a Darwin with the pronouncements of a popular radio philosopher.

The collection of facts can not be separated from reasoning. Reasoning, however, may have a very tenuous connection with facts. Thinking has an insidious and persistent tendency to wander away from the facts. Science attempts, not to substitute facts for thinking, but to keep thinking in accord with the facts.

Science is not merely a technique of investigation; it is a habit of mind, a point of view, a faith. It has one inexorable standard of belief, Is it true? It has one test of truth, conformity to experience. All its techniques are for the purpose of making accurate and objective examination of experience. This is the final criterion.

The quest of science is long and its progress painfully slow. Its gains sometimes seem pitifully small compared with the vast unknown. Men are continually tempted to short-cut the whole process and to substitute dogma, prejudice and wishful thinking for a patient examination of the facts. Action based on these grounds may bring the attainment of immediate ends, but it is only through the scientific method and temper that we may hope for permanent progress.

THE SCIENTIFIC MOVEMENT IN EDUCATION IN FOREIGN COUNTRIES[1]

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THE most notable feature of the tendency which this yearbook so well analyzes and describes is that the entire development has taken place within the professional lifetime

[1] Read before the National Society for the Study of Education, on the evening of February 26, at the Atlantic City meeting of the American Association of School Administrators.

of many who are in this audience to-night. At the beginning of the period, practically the beginning of the century, the term "the scientific movement in education" was in use; but it was used to designate an entirely different social or educational phenomenon from that indicated by its present use. Then the "scientific movement in education" meant the introduction of the study of the natural sciences into the curriculum of the school. It indicated the views of Spencer and of Huxley and of their coworkers who labored so persistently through the latter half of the nineteenth century for a greater appreciation of the natural sciences on the part of the public. To a very slight extent the term connoted the development of and the appreciation of the scientific method in studies. To yet a slighter extent the term implied the use of such method in the study of education as a subject of study. That use was introduced only as scientific methods were used in the study of psychology as an approach to education. Throughout this early period, when the interpretation of the problems of education were not empirical they were yet largely stated in terms of logic or of metaphysics. This and related phases of our subject will be considered by those who are leaders in this field; it would ill become a layman to attempt to discuss those phases of the subject in the present company.

I will confine myself to the discussion of a few aspects of the subject wherein I have had some special opportunities of observation; namely, what this development of scientific basis of education has meant in the field of education abroad.

The first point to note is that science is the one phase of human achievement that is entirely international in character, even if the movement which we consider is largely the product of our own country. We know that the use or applicability of scientific principles are quite independent of any locality or of any national boundary. It is often said that music and art constitute an international language. But both have national, or at least regional, characteristics. It is difficult for the West to have any real appreciation of Eastern music or even very much of Eastern art. At least the national and regional marks of both music and graphic art are so recognizable that they cease immediately to have international significance. In theory religion is an international bond. And yet each religion is a peculiar possession of its own people. Religion is as often a barrier as a bond in international dealing and understanding. Trade and war both involve national relationships; both can be truly international. Yet they can hardly be said to make for a friendlier understanding between peoples. Science is the one universal bond, alike for all peoples, contributed to by all peoples, of universal validity among all peoples, and used or usable by all peoples.

So, though the educational system and ideas of people vary, while each people has its own aims and purposes, while there are diverse educational limitations controlling in each country; the science of education, so far as there is one, is valid for all countries. Educational aims or systems can not be transferred without essential modifications; but the scientific principle can be.

And in fact that has or is being done; and this is my second argument. The many youth of various foreign lands who have received their professional training in the United States have carried back to their homes such ideas and teachings and are attempting to apply them. It is true that in many cases they have attempted to transplant the organization or systems, methods and professional ideals, class-room organization and other essential features of education. But in most cases they soon learn that this can not be done without extensive adaptation. It is true that many have been able to learn and to suggest much in the way of adaptation. But the one thing of

their professional training that all have been able to carry over and transplant to their own country is the scientific technique applicable to the study of education and the procedure of scientific education.

It is worth while first to note that the development of the modern educational system in a great many countries is practically coincident with the twentieth century and the development of the scientific movement in education; and also, it may be noted, with the attendance of foreign students in United States educational institutions.

In China, Soviet Russia, the Philippines, Iraq, the Arab lands of the Near East, significant educational systems have developed within that period. The beginnings in Turkey, India, Egypt and other lands of eastern Europe, as well as of Asia had not long antedated this period. I would not be understood as saying that this advance in education and the development of the scientific study of education in these countries was due wholly to the training received by these young people in the United States. There are many from various countries who are trained elsewhere than in the United States. There are many foreign educators who have a knowledge of languages as few from the United States have, and who have read the educational publications of other lands as few of our own educators read the professional magazines from our own land. From such sources, from visits and from conferences such educators manage to keep well abreast of modern ideas in education.

Turkey, for illustration, has sent very few students of education to be trained in the United States; and yet a competent American expert in education, who visited intimately the schools of that country, said there was no modern device but what was being practiced somewhere in Turkish schools, and that there was no modern idea in education but what was held by some educator somewhere in Turkey. The limitation is that such may exist only in isolated cases; there may be no modern principle that is generally held or practiced. Such general practice, however, is a matter of administrative development, which in turn is a matter of social or political development rather than of educational development. In the field of adult education through political and social device this particular country is setting an example to the rest of the world, West as well as East. The country is being remade by a system of education controlled by government.

The determination of the curriculum content is generally a matter of public concern as well as of educational importance. That history, geography and economics or any related social science subject have peculiarly local or national significance no one will deny. That such subjects should by law be required to be taught in the vernacular by a national of the country few would deny. Such are the major questions of the curriculum that are presented by most of these new systems. Few of these problems lend themselves to study directly by scientific method.

The next problem which most of these countries face is of technical education in some of its aspects; but unfortunately little progress has been made in our own country or in any other country in solving this problem. It is the question of what practical subjects, especially in the way of technical, industrial or agricultural significance, can be substituted for the school activities of the traditional verbal character. This question requires for its answer not only scientific investigation but prolonged scientific experimentation and scientific measurement of results. Here the countries with more recently established systems are apt to offer as much in the way of an answer as can the longer established systems of the West.

In all these countries the traditional systems were controlled by the dominating religious forces, whether Buddhist, Con-

fucian, Moslem or Christian. So the traditional subject-matter was religious or verbal, so also formal and traditional. So the need is immediate for the selection of new subject-matter in these new national systems.

For the same reasons the second vital problem of the curriculum in all these countries is that of language. To a degree this is also a problem to be determined by political consideration; but only to a degree. In the Philippines there are many local dialects, few with any literature or definite cultural forms. About two per cent. of the most favored of the people speak Spanish. The American solved the problem on political grounds by establishing the use of English. But the problem yet remains of which is the best language for the education of children. Here undoubtedly, the scientific method of investigation of the subject has much to contribute. In Canton, China, I visited a school in which the two upper grades were doing their work in the Mandarin language, the two middle grades were doing all their work in a newly approved artificial dialect, approximating Pei Hua; while the two lower grades had adhered to the use of the local dialect. At the same time the many private schools used the classical language of the Confucian literature, the dead language of scholars only.

The problem is not of language alone; that of alphabet is quite as important. In fact, this barrier of language or of alphabet is the greatest obstacle to the dissemination of culture in all these oriental lands. The Turkish government recently solved the alphabet problem by introducing the Latin letters in place of the cursive script of the Near East. The Slavic people yet use modified forms of the Greek, while the Chinese struggle with the innumerable multitude of characters and accents with no alphabet at all.

There are in these Eastern lands many students who are applying the scientific methods gained in their Western training to the solution of this language problem as the outstanding task of the scientifically trained or educated in their own lands.

While these various aspects of the problem of the material of instruction are the ones which demand the great attention in all these new educational situations, the problem of the measurement of results, of methods of instruction, especially of reading, projects and problems all have received very considerable attention.

In the solution of the major problem of the simplification of these Eastern languages or at least the reduction of them to an alphabet and an alphabet in which the mechanical difficulties are not so great as in the inherited language forms, the combined efforts of many trained scientific educators the world over are united. The fact remains that until the entire problem of the simplification of the language of the school, the attainment of universal education by many of these peoples is quite impossible, for if the average individual must overcome this language barrier as it now exists no time would be left for any further progress. The idea that Chinese can be mastered with 1,000 of the present characters is as much of an illusion as that English can be mastered with a vocabulary of 850 words.

Perhaps enough has been said to indicate that this curriculum phase of education in these recently established educational systems is about where it was in the United States when the scientific movement in education began. Also to indicate that this problem of curriculum affords as great an opportunity as ever for investigation and for controversy.

I realize that nearly every statement which I have made is open to investigation and to violent controversial attack. While it would not be expected that much detail of the application of the scientific method in education in foreign lands would be furnished, within the limits of a fifteen-

minute paper, some indication may be given of the application of the subject in foreign fields of educational administration.

First to be noted here is the development of an administrative device which has been similarly developed in the United States within the same limits. This is the special council which in one of its aspects corresponds to the research staff in connection with most state departments of education and with most city systems or to the research members of many colleges or university faculties. In foreign lands many such staffs have developed in a variety of ways. In Scotland the research staff is maintained by the Educational Institute of Scotland, which is supported by the teachers and teachers organizations through voluntary contribution. By the way, this organization is the only research organization that has proposed and actually carried through an intelligence test of an entire people, or rather of an entire age group of a nation, unless the army test may be considered such. This is published under the title "The Intelligence of Scottish Children."

In Germany the research institute was "Central Instituts für Erziehungs Wissenschaft" maintained by the government. In China, to cite one of the modern systems, the research experts are usually on the departmental staffs of universities, both government and private, but also through one of the coordinate branches of government; for along with the executive, legislative and judicial branches of government is one of examination. While its purpose is that of investigation, there is also a division of censorship either of which might lend itself to the patronage of research. But the form of development of scientific method most to be noted is that in modern states, especially in those that tend to a highly centralized, totalitarian form of an educational council which either includes the function of research or devotes itself wholly to research or investigation and to the application of the results of investigation. Both the Philippines and Puerto Rico have developed such departments under the influence of the United States. Turkey has such a council, which takes the load and much of the responsibility in all educational changes. For a time Russia supported such a department. In most countries where a modern educational system has been developed the responsible leaders are conscious at least of some of the limitations of the traditional forms of the West, and along with the adoption of a modern system have established a department of research or of an advisory council as a device of guidance.

The second of these lines of development of research which is largely administrative but which might also be classed with the application of science to the curriculum or to methods is that of scientific modification or of a substitute for examination. Naturally most traditional systems were related to religion and religious literature, hence were both bookish and formal. When reduced to educational procedure they lent themselves particularly well to examination. The famous examination system of China, which in its perfect form lasted almost one thousand years, is the best example. But when education is primarily literary some form of the examination system is apt to flourish. Acceptable theories of education have grown up out of this condition. In the recent past much scepticism exists regarding the examination system wherever it is established. But there is always honest doubt as well as honest inquiry concerning many substitutes. In most countries where modern systems have developed and those modern devices for securing efficiency, such as the council mentioned above, there is a desire to receive help from the modern scientific trend in education. Hence the youth in many lands, who have received professional training in the United States are apt to introduce some form of quantitative test as a substitute for, or supplement to, the tra-

ditional examination system. However, it is first necessary to educate or to convert the teacher before he can be expected to accept scientific procedure in place of the traditional ones, which have the approval of his superiors and of his predecessors. It is a fact that almost everywhere this phase of the scientific movement received more ready acceptance than scientifically prepared modification of method or of organization because of the favorable attitude toward change accepted by the many who had experienced and realized the inadequacy of the traditional system of measurement by examination.

Obviously it is quite impossible to follow all these leads of this annual volume into the foreign field. Every line of local development has its counterpart in many corners of the field.

It now seems that the conflict is not as in the past between the scientific approach and the conventional traditional one based on the association of the school with the church. The competition of the scientific method of the present is with the school dominated by the state. In nearly all these newer school systems all vital questions concerning education are answered by the all-powerful administration of the totalitarian state.

It will not be denied that many problems of education are properly solved as problems of political or of social character rather than of a purely pedagogical or scientific character. Yet there are few but where the scientific approach would avoid many pitfalls and could probably add much of value to any authoritarian solution.

Let us take one illustration. We may not realize it, but probably half of the children of the world, even those in schools, face the problem of "dual language." That is, the language of the school and of the home are different. This is true in Latin America, in most of eastern Europe, in India, China and with the immigrant population of the United States. This problem arises largely because the questions of the curriculum are determined by the governments as essential political problems. Necessarily any attack upon the difficulty of the dual language problem may be assisted by many devices of a scientific language study, as for example the word count, the listing of grammatical errors, the contributions and the study of physiological phonetics.

Thus in a way the scientific approach to the solution of educational problems may come to have a great political and social significance and may be the chief contribution of the educator to counterbalance a most serious and subtle attack upon the validity of the whole educational endeavor.

In my judgment the chief danger ahead in education is the belief in an all-powerful government, whether called totalitarian, fascist, communist or democratic, which assumes all authority over education, which assumes to answer all problems which arise in education by government fiat or regulation. The one reliance of education in combatting this belief and this great danger is a reliance upon the success of investigation and the use of scientific methods to establish the answer to all professional problems which may arise.

EDUCATIONAL RESEARCH IN PERSPECTIVE[1]

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IN 1918 and again in 1919 I was president of the organization now known as the American Educational Research Association. An innovation was introduced into

[1] Read before the National Society for the Study of Education, on the evening of February 26, at the Atlantic City meeting of the American Association of School Administrators.

the annual program of February, 1919, whereby the president was required to review the accomplishmentts in research during the previous year. I presume I duly complied with this requirement, although I have no record of what I said. The membership, however, was so pleased with itself in this matter that it adopted the innovation as a permanent policy.

Accordingly, in February, 1920, I summarized educational research in 1919 and then, or a bit later, wrote out my ideas somewhat fully. I have recently been interested in examining this record in the light of developments during the ensuing eighteen years. I find that it affords a rather interesting perspective.

Perhaps the year 1919 is little more to you than a numerical abstraction. Yet it was an eventful period. It was the first year of peace in the world since 1913. All through the year our men were returning from the battlefields of Europe. The war attitude was still with us. Its idealisms were still real. During much of the year the Peace Conference at Paris was on, and in June the Treaty of Versailles was signed. Two Constitutional amendments were products of the war mentality: the Prohibition Amendment, which went into effect in 1919, and the Women's Suffrage Amendment, which passed Congress in that year. Ever since his return in July, Wilson had been trying to secure the assent of the Senate to the new treaty including the Covenant of the League of Nations. Late in the year he was stricken with paralysis while stumping for this cause, and when the year ended the cause was already becoming a lost cause.

It was a year in which the prestige of our country was greater than ever before and greater than it ever has been since. We had passed from the status of a debtor nation to the status of a creditor nation. We had become conscious of greater wealth. With an ease for which no one was really prepared, we had spent twenty-two billion dollars on our part of the war and had lent nine billion dollars more to the Allies. The cost of living was rocketing, being 77 per cent. above the level of 1913. Strikes were prevalent. Farmers were making more money than they had ever made. Industry was humming. The usual crash was on the way, but it would not materialize until the next year.

Such was the setting in this year of grace, 1919, about a decade after the measurement movement began; and the setting was hardly more remarkable than the doings of educational research workers. In this year the tests became of age in the sense that they became commercially advantageous and began to be issued by regular publishing houses. Intelligence testing, which had gained its impetus with the old Army Alpha during the war, captured the imaginations of teachers and administrators. Indeed, in this year the lines were laid down along which intelligence testing would proceed during the next ten or fifteen years.

Whereas educational research up to this time had meant pretty much the making and crude validating of tests, new topics involving in many cases the incidental use of tests began to receive attention. The beginning of a new type of research concerning the curriculum was clearly manifested at this time. Two principles of curriculum investigation were brought to the attention of the educational world this year: the principle of frequency of use and the principle of philosophical analysis. These two principles were typified respectively by Dr. Guy M. Wilson's monograph, entitled, "A Survey of the Social and Business Usage of Arithmetic," and by Dr. W. W. Charters's educational conference lectures at the University of Indiana, entitled, "Scientific Curriculum Construction."

In the years that have intervened these two principles of curriculum analysis and

construction have had numerous applications and many critical evaluations. I should say that neither of them to-day ranks as high as it promised to rank in 1919. We have come to believe that more vital approaches to the development of the curriculum are to be found on the one hand in an analysis of what society does, and on the other hand in a consideration of the child as a growing organism.

When I wrote my report of research in 1919 I noted, apropos particularly of the monographs by C. A. Buckner and E. K. Fretwell, the development of the diagnostic idea both in the construction of tests and in their use. Even at that time I was able to speak with disapproval of articles and speeches about testing in which were used, as I put it, "arguments which were fresh and interesting six or eight years ago but which are now too utterly frayed out to be anything but old stuff for both the speaker and the hearer." I observed that the days when tests were supposed to accomplish magic merely by their administration were gone. I noted the testimony at a certain meeting of a man who was particularly incensed because he had given some tests sent out from the University of Illinois and because, as he said, nothing had come of them. Teaching was no better, children did not know any more, no change had taken place, so far as he was aware.

This attitude would hardly be expected in these days. Tests have their uses, and I presume there has never been a time when greater numbers of them were being applied. But the time has passed when an automatic teaching result or a change in the behavior of pupils is expected.

Of course, this diagnosis which got under way about the time of which I am speaking has since run a remarkable course. It isn't always called diagnosis. With the facility with which educational people coin new terminology, the idea is made to appear in various guises and for the service of various purposes.

Diagnosis with the attendant testing procedure lies at the basis of the maintenance programs of which we have heard much during the past dozen years. It is the substantial basis of the remedial teaching which has more recently somewhat crowded the maintenance program out of popular favor. But I think diagnosis with its attendant prognosis has served education well and truly in the matter of guidance. Guidance is not only one of the favorite topics to-day but one of the really big ideas in education. No competent guidance program to-day fails to take full account of the instruments of research which have developed so rapidly during the last twenty years. By means of these instruments the interests, capacities and drives of pupils are investigated to the end that a program may be laid out for them which they can work at with zest and increase of power. In short, as McConn says, we are coming to appreciate the literal correctness of Professor Morison's startling dictum, "to the effect that teachers should spend half their time studying their pupils as growing individuals, and the rest of their time doing what that study indicates is desirable and necessary."

But it is clear from my notes on the year 1919 that something different is available to-day in the way of tests than was then thought of. In those days we were very proud of certain crude group tests of literacy which we called intelligence tests. They did tell us some interesting things about the aptitude of students for bookish tasks. We were equally proud of our achievement tests in the different school subjects, and I may even point out to you that a start had been made in the constructing of tests of a quite different character; for in 1919 June Downey's Will-Profile Test was published.

In respect to tests, it is worth mentioning that in the intervening period since Miss Downey's materials were published there have been two broad tendencies: first, a

tendency to strengthen the subject-matter tests by making them appeal to judgment, inference, understanding and thought; and second, a tendency to test quite different things, quite different aspects of personality, than was at first the case. Thus we have interest tests, such as the Strong Vocational Interest Test, personality inventories and ratings, of which the Bernreuter materials may stand as a type, self tests, tests of mechanical ingenuity, character tests and so on. Moreover, the view which was current in 1919, that every test to be worth anything must be objective, has been abandoned in the interval. We have reinstated the essay type of test. We have restored the oral examination to respectability. We have recognized the validity of all sorts of performance tests, of interviewing and even of general observance of behavior.

From time to time I have been asked whether the test movement has not spent its force. I have been obliged to conclude that it has not, that it was never more alive and vigorous than to-day, but that it involves different types of tests and more defensible uses of them.

Moreover, as I read my report of what was milling around in the research world in 1919, I am convinced that, whether because of the measurement movement or in spite of it, we have adopted in more recent years a significantly different attitude toward that body of doctrine which we regard as the field of education. In those days there isn't any doubt but what research workers were largely concerned with isolated facts. There was much talk of a science of education but, in my judgment, there was less justification for such talk than there is to-day. For science gains in value not by the number of separate facts it collects but by the generality and power of its principles. Facts not only exist, they have meaning and value.

The research workers of twenty years ago were quite clearly the supporters of an atomistic psychology and of a repetitive doctrine of learning. The rôle of insight in learning was to be pointed out by the Gestaltists and was to give to research a different orientation. If in this process there has been a relaxing of that rigor derived from the physical sciences, if there has been a more human rounding off of figures and a desertion of four-place decimals, I for my part am glad of it. I do not think psychology—and education as science is largely psychology—should seek its scientific principles in physics, chemistry and mathematics. There came a time in the development of educational research in this country when minute analysis seemed destined to forfeit the substance of education for the shadow of acceptable scientific form.

I confess that my remarks have been a bit rambling, but Brother Freeman only gave me fifteen minutes, and what can you do in the treatment of a period so long in a time so short? I shall conclude by merely mentioning some of the emergent movements in educational research during the past fifteen or twenty years. Some of these I have already touched upon. The watchwords are the rise of an organismic psychology, the extension of more or less exact methods into new fields such as personality, aptitude, will, effort, and so on, the utilization of data for more significant purposes, especially for the better understanding of pupils and their wiser guidance, the development of a more dynamic curriculum following upon more promising methods of curriculum construction, the recession of research workers from merely deterministic attitudes and a sense of the almost overpowering significance of individual differences.

Finally I think we have passed to some extent from the idea that the product was all-important to the idea that the process may be even more important. It is an interesting bit of history in educational research that when in 1909 at the December meeting

of the section on education of the American Association for the Advancement of Science Dr. Thorndike presented his handwriting scale—the first modern instrument of educational measurement—Dr. Judd is reported to have objected: "Education is concerned not with the products but with the processes of mental development."[2] Although for many years Dr. Judd afterwards seemed to have forgotten what he said on this occasion, the drift of events has justified the sagacity of his early thinking. We now recognize that automatic response, undeviating and unthinking in its character, may be less important than the way results are secured. We now believe that under some circumstances a decision unqualified and authoritative is far worse than a discussion open-minded and tolerant.

These, then, seem to me some of the ways in which educational research may be viewed in perspective.

THE RELATION OF SCIENCE AND PHILOSOPHY AS THE BASIS OF EDUCATION[1]

By Professor JOHN DEWEY
COLUMBIA UNIVERSITY

EMPIRICAL and experimental philosophy has no quarrel with science, either in itself or in its application to education. On the contrary, scientific conclusions and methods are the chief ally of an empirical philosophy of education. For according to empirical philosophy, science provides the only means we have for learning about man and the world in which he lives. Some have thought that this fact makes philosophy unnecessary. They have supposed that the admission that science is supreme in the field of knowledge covers the whole ground of human experience. The elimination does rule out *one* kind of philosophy, namely, that which held that philosophy is a higher form of knowledge than the scientific kind, one which furnishes knowledge of ultimate higher reality. But it does not follow from the elimination of this particular type of philosophy that philosophy itself must go.

It would follow if man were simply and only a knowing being. But he is not. He is also an acting being, a creature with desires, hopes, fears, purposes and habits. To the average person knowledge itself is of importance because of its bearing upon what he needs to do and to make. It helps him in clarifying his wants, in constructing his ends and in finding means for realizing them. There exist, in other words, values as well as known facts and principles and philosophy is concerned primarily with values—with the ends for the sake of which man acts. Given the most extensive and accurate system of knowledge, and man is still faced with the question of what he is going to do about it and what he is going to do with the knowledge in his possession.

In this matter of the connection of what is known with values, science is an ally of an empirical philosophy against absolute philosophies which pretend that fixed and eternal truths are known by means of organs and methods that are independent of science. The objection to this position is not merely theoretical. The practical objections to it are that it strengthens appeal to authority and promotes controver-

[2] The report of this meeting is contained in the first issue (January, 1910) of the *Journal of Educational Psychology*. The quotation is found on page 160.

[1] Read before the National Society for the Study of Education, on the evening of February 26, at the Atlantic City meeting of the American Association of School Administrators.

sies that can not be settled by the use of the methods of inquiry and proof that have been worked out in the sciences. The only remaining alternative is the use of coercion and force, either openly or covertly through falling back on customs and institutions as they happen to exist. There is no great danger that the present-day revival in some quarters of Greek and medieval philosophies of eternal first principles will make much headway as a theoretical philosophy. There is always danger that such philosophies will have practical influence in reinforcing established social authority that is exercised in behalf of maintenance of the *status quo*. Against this danger, an experimental philosophy stands in firm alliance with the methods by which the natural sciences arrive at warranted truths.

The philosophy of education is not a poor relation of general philosophy even though it is often so treated even by philosophers. It is ultimately the most significant phase of philosophy. For it is through the processes of education that knowledge is obtained, while these educational processes do not terminate in mere acquisition of knowledge and related forms of skill. They attempt to integrate the knowledge gained into enduring dispositions and attitudes. It is not too much to say that education is *the* outstanding means by which union of knowledge and the values that actually work in actual conduct is brought about. The difference between educational practices that are influenced by a well-thought-out philosophy, and practices that are not so influenced is that between education conducted with some clear idea of the ends in the way of ruling attitudes of desire and purpose that are to be created, and an education that is conducted blindly, or under the control of customs and traditions that have not been examined, or in response to immediate social pressures. This difference does not come about because of any inherent sacredness in what is called philosophy, but because any effort to clarify the conceptions of ends to be attained is, as far as it goes, philosophical.

The need for such systematic clarification is especially urgent at the present time. Applications of natural science have made an enormous difference in human relations. They have revolutionized the means of production and distribution of commodities and services. They have effected an equally great change in communication and all the means for influencing the public opinion upon which political action depends. These applications decide, more than any other force or set of forces, the conditions under which human beings live together and under which they act, enjoy and suffer. Moreover, they have produced communities that are in a state of rapid change. Wherever the effect of the applications of science has been felt, human relations have ceased to be static. Old forms have been invaded and often undermined, in the family, in politics and even in moral and religious habits as well as in the narrower field of economic arrangements. Almost all current social problems have their source here. Finally, conceptions of ends and values that were formed in the pre-scientific period and institutions, having great power, that were formed in the same period retain their influence. Human life, both individually and collectively, is disturbed, confused and conflicting.

Either the instrumentalities of education will ignore this state of affairs and the schools will go their own way, confining themselves for the most part to providing standardized knowledge and forms of skill as ends in themselves, modified only by concessions to temporary social pressures, or they will face the question of the relation of school-education to the needs and possibilities of the social situation. If the latter problem is faced, then there arise problems of the re-adaptation of materials

of the curriculum, methods of instruction and the social organization of the school. A philosophy of education can not settle once for all how these problems shall be resolved. But it can enforce perception of the nature of these problems, and can give suggestions of value as to the only ways in which they can satisfactorily be dealt with. Administrators and teachers who are imbued with the ideas can test and develop them in their actual work so that, through union of theory and practice, the philosophy of education will be a living, growing thing.

I come back, then, to the question of the alliance of empirical pragmatic philosophy with science against both a philosophy of truths and principles that are alleged to be superior to any that can be ascertained by empirical methods of science, and also against dogmatic authority, custom, routine and the pressure of immediate circumstances. Science used in the educational field can ascertain the actual facts, and can generalize them on the basis of relations of cause and effect. It can not itself settle the value of the consequences that result from even the best use of more economical and effective methods as causes of effects produced. The consequences have to be evaluated in the light of what is known about social problems, evils and needs. But without the knowledge of actual conditions and of relations of cause and effect, any values that are set up as ends are bare ideals in the sense in which "ideal" means utopian, without means for its realization.

I shall mention two or three matters in which the need for cooperation between philosophy and science is estimately intimate. Since scientific method depends upon first-hand experimentally controlled experiences, any philosophic application of the scientific point of view will emphasize the need of such experiences in the school, as over against mere acquisition of ready-made information that is supplied in isolation from the students' own experience. So far, it will be in line with what is called the "progressive" movement in education. But it will be an influence in counteracting any tendencies that may exist in progressive education to slur the importance of continuity in the experiences that are had, and the importance of organization. Unless the science of education on its own ground and behalf emphasizes *subject-matters* which contain within themselves the promise and power of continuous growth in the direction of organization, it is false to its own position as scientific. In cooperation with a philosophy of education, it can lend invaluable aid in seeing to it that the chosen subject-matters are also such that they progressively develop toward formation of attitudes of understanding the world in which students and teachers live and towards forming the attitudes of purpose, desire and action which will make pupils effective in dealing with social conditions.

Another point of common interest concerns the place in the schools of the sciences, especially the place of the habits which form scientific attitude and method. The sciences had to battle against entrenched foes to obtain recognition in the curriculum. In a formal sense, the battle has been won, but not yet in a substantial sense. For scientific subject-matter is still more or less segregated as a special body of facts and truths. The full victory will not be won until every subject and lesson is taught in connection with its bearing upon creation and growth of the kind of power of observation, inquiry, reflection and testing that are the heart of scientific intelligence. Experimental philosophy is at one with the genuine spirit of a scientific attitude in the endeavor to obtain for scientific method this central place in education.

Finally, the science and philosophy of education can and should work together in overcoming the split between knowledge and

action, between theory and practice, which now affects both education and society so seriously and harmfully. Indeed, it is not too much to say that institution of a happy marriage between theory and practice is in the end the chief meaning of a science and a philosophy of education that work together for common ends.

EDUCATIONAL EVENTS

THE SUMMER SESSION AT NORTHWESTERN UNIVERSITY

MORE than four hundred courses with a faculty that will include a hundred and six visiting members will be offered at the summer session of Northwestern University which opens on June 21 and which will last for eight weeks. Attendance is expected to exceed last year, when the enrolment was 4,100.

Harvard University, Yale University, the University of Southern California, the University of Puerto Rico, Columbia University, the Ohio State University, Princeton University, the University of Pennsylvania and the University of Michigan will be represented on the faculty, which will number more than three hundred members. The curriculum will include courses in liberal arts, education, graduate, law, music, speech, commerce, journalism, dentistry and medicine. A number of special educational and recreational features, open to all students, will supplement the regular class work, including, choral, band and symphony concerts and plays in the University Theater.

Members of the French staff will preside over daily luncheons at which the French language will be used exclusively. The School of Speech is sponsoring a lecture-symposium in public speaking, to be addressed by Dr. Gordon Allport, professor of psychology at Harvard University; Dr. Lyman Bryson, professor of adult education, and Dr. George W. Hartmann, professor of education at Columbia University, and Harry Caplan, professor of classics at Cornell University. Among the visiting educators for the College of Liberal Arts are: Dr. Louis I. Bredvold, professor and chairman of the department of English at the University of Michigan; Peter Paul Ott, American sculptor; Dr. Thomas Nixon Carver, professor emeritus of political economy at Harvard University; Ray Faulkner, director of art at the University of Minnesota, and Dr. Karl M. Dallenbach, professor of psychology at Cornell University.

The graduate school, in addition to its regular courses, will again open the Institute of Higher Studies in English to a limited number of successful secondary school teachers.

A plan of individualized programs of study has been arranged by the School of Education. Demonstration clinics in Evanston and New Trier Township high schools have been arranged. Among those who will teach in the school are: Frank E. Baker, president of Milwaukee State Teachers College; Dorothy Blatter, principal of the Francis Parker School of Chicago; Helen Bragdon, dean of women at the University of Rochester, and Raymond W. Fairchild, president of Illinois State Normal University.

Visiting professors in the School of Law will include Judge Victor Hemphill, of the Illinois Circuit Court; Frederick K. Beutel, formerly dean of the Law School at Louisiana State University, and Professor Myres S. McDougal, of Yale University.

The School of Music will offer courses in theoretical and applied music, music education and church and choral music. The staff will include: A. A. Harding, band director at the University of Illinois; Noble Cain, director of the Chicago a capella choir; Frank Simon, director of the Armco band, and Lloyd F. Loar, Chicago acoustical engineer.

At the School of Commerce Dr. Fritz Machlup, professor of economics at Buffalo, and Dr. Thomas Nixon Carver, of Harvard University, will offer courses. The annual National Institute for high-school students to be held from June 13 to July 9 will again be sponsored by the School of Journalism. The problems of journalism teachers will be considered in a special course offered in collaboration with the School of Education.

THE SUMMER PROGRAM OF THE UNIVERSITY OF KENTUCKY

THE University of Kentucky this summer has selected a large group of visiting instructors to augment the resident faculty of approximately

two hundred members. All departments and colleges of the university will offer courses. Three thousand students are expected to attend. The fields of study that have been selected for special emphasis include reading, the curriculum and public health.

A three-credit course on "Problems in Diagnostic and Remedial Reading" will be offered from June 13 to June 29. This will be given by: Professor Arthur I. Gates, of Columbia University; Laura Zirbes, of the Ohio State University; Marion Monroe, of the Reading Clinic of Pittsburgh; Emmet A. Betts, of Pennsylvania State College; E. A. Taylor, of the American Optical Company, and May K. Duncan, of the University of Kentucky. Lectures will be given from ten to twelve o'clock daily, and arrangements will be made for laboratory demonstrations and for a study of the uses of such machines as the Ophthalm-o-graph and Metron-o-scope. A feature of the course also will be observation of reading as it is taught in the training school.

Immediately following the course in reading, a three-cerdit course in the "Technique of Curriculum Making" running from June 30 to July 16 will be offered. Dr. W. C. Bagley, of Columbia University, and Dr. Henry Harap, of the George Peabody College for Teachers, will participate. Dr. Bagley will lecture on "The Philosophy and Trends in Curriculum Making," and Dr. Harap will lecture on "The Techniques in Curriculum Revision." John Crowe Ransom, of Kenyon College, Gambier, Ohio, will teach a three-credit course in American Poetry from June 13 to June 29.

The Department of Public Health, including work for public health officers, sanitary engineers and nurses, was inaugurated in 1932. This department is under the joint supervision of the State Department of Health and the Department of Health and Hygiene at the University of Kentucky. The program offered is varied and the lectures include men prominent in the public health field. On the staff for this coming summer are: Dr. Harry S. Mustard, professor of public health, New York University; Dr. John W. Fertig, School of Hygiene and Public Health, the Johns Hopkins University; Dr. Milford E. Barnes, professor of hygiene and preventive medicine and bacteriology, the State University of Iowa College of Medicine, and Dr. Howard B. Lewis, professor of biochemistry, University of Michigan Medical School.

The summer session consists of two terms of five weeks each. The first term begins June 13 and closes July 16; the second term begins July 18 and closes August 20. Three full summer sessions count the equivalent of one full year's residence for either the graduate or undergraduate degrees.

REACTIONARY LEGISLATION IN KANSAS

A BILL has been introduced in the Kansas Legislature calling for an investigation of "subversive activities" of the state universities. It is said that this is aimed particularly at the University of Kansas. A resolution, introduced by Dr. C. E. Rogers, head of the department of journalism at the Kansas State College, has been unanimously adopted by the Kansas State College Chapter of the American Association of University Professors. The resolution, which was sent to the governor and to the members of the legislature, follows:

Acting upon our own initiative as citizens and educators of Kansas, and aware of our stewardship to the people of Kansas, we urge you to preserve the institution and cherished tradition of free education in our commonwealth.

We earnestly petition you to protect the name of Kansas from the scorn of free men everywhere, by preventing the passage of the proposed measure designed to set up a political committee to judge the qualifications of persons connected with our institutions of higher learning, and to investigate these institutions for the purpose of discovering so-called subverse influences in them.

We feel that such a measure would be an unwarranted reflection upon our patriotism, an implied threat to our freedom as teachers, and gratuitous disparagement of our competence for the task to which we have devoted our lives.

Such a measure, we believe, would so discredit the institutions of higher learning as to cause competent educators to turn their backs upon our state for a generation to come.

Furthermore, we feel that all self-respecting educators now connected with higher education in Kansas will leave the state at the first opportunity afforded them, if this measure is put into effect.

Our official acts, and our work as educators are

an open book. We welcome examination and criticism.

But we abhor official inquisitions with all the intensity of feeling bequeathed us with the precious heritage of a century and a half of free education in America.

We who have dedicated our lives to the acquisition of knowledge, who have trained ourselves and teachers so that we may pass the torch we bear to succeeding generations, are well aware that only in an atmosphere of freedom can we carry on our work.

Fear, suspicion and official coercion will destroy all we represent, as it has already destroyed the work of scholars in those unfortunate nations of Europe and Asia which have come under the rule of dictators.

We cherish for the people of Kansas the reputation they have always borne as zealous champions of education. We urge you to keep their reputation untarnished.

THE ANNUAL MEETING OF THE AMERICAN COUNCIL ON EDUCATION

THE twenty-first annual meeting of the American Council on Education will be held in Washington, D. C., on May 6 and 7 under the presidency of Dr. Edward C. Elliott, president of Purdue University and chairman of the council during 1937–38.

More than three hundred associations and institutions will be represented, a substantial growth for the council, which evolved out of a conference of delegates from a dozen national organizations held in January, 1918. The 1918 meeting was called to discuss the contribution of the schools and colleges in the national crisis of the world war; the 1938 meeting is called to discuss the social and educational implications of the program of the council.

The majority of the national organizations which helped to found the council continue to participate in and support its work. In 1918 there were a dozen such organizations; to-day there are more than 50 represented in the constituent and associate membership of the council. In addition, delegates of 360 institutional members will attend the meeting from colleges and universities, technical institutions, state departments of education, city school systems and private schools. There will be, of course, many other civic and social leaders who are interested in the development of American education.

Dr. George F. Zook, president of the council, has announced a program for May 6 and 7, 1938, which is indicative of the comprehensive interest of the organization. Well-known national leaders, college presidents, school superintendents and members of the council staff will take part in the program, which this year will be held at the Mayflower Hotel in Washington.

President Elliott will preside at the opening session on Friday morning, May 6. He will introduce Dr. Zook, who will read his annual report. Dr. Karl W. Bigelow, recently appointed director of the Commission on Teacher Education, will follow him with an address, "Teacher Education in a Democracy." Dr. Bigelow is executive officer of the five-year study of the major issues in teacher education which the council announced in February of this year. There will be time for discussion of both papers.

On Friday afternoon an innovation in the program has been scheduled. The meeting will divide into four conference sections for informal discussion of several of the projects related to the work of the council. Section I, under the direction of Homer P. Rainey, of the American Youth Commission, will consider the activities and work of the commission and the essential factors in the American youth problem. Section II, under J. Harvey Cain, technical associate of the Financial Advisory Service, will discuss the administration of student loan funds, and the essentials of a college or university budget. Section III, in charge of Charles F. Hoban, Jr., director of the Educational Motion Picture Project, will be devoted to motion picture services on the college level, including production, teaching with films and distribution. Section IV, with Walter C. Eells, coordinator of the Cooperative Study of Secondary School Standards, will discuss the significance of the measurements of educational temperature of 200 representative secondary schools which this study has undertaken.

The formal dinner on Friday evening at the Mayflower Hotel will have as toastmaster Eugene R. Smith, head master of Beaver Country Day School and first vice-chairman of the council for 1937–38. President Elliott will deliver the annual chairman's address at that time. The guest speaker, the Honorable William E. Dodd, is the former United States Ambassador to Germany. Dr. Dodd has chosen as his sub-

ject, "The University and the Totalitarian State."

The opening session of the second day, May 7, will have as its presiding officer Guy E. Snavely, executive secretary of the Association of American Colleges and second vice-chairman of the council for 1937–38. Chancellor O. C. Carmichael, of Vanderbilt University, will speak on "Some Issues in Higher Learning." The second address will be given by Alan Valentine, president of the University of Rochester. The final speaker of the morning program will be John A. Sexson, superintendent of schools of Pasadena, California, and president of the American Association of School Administrators. His title is "Looking Ahead in Secondary Education." The business session will be held on Saturday morning.

On Saturday at 12:30 all persons attending the meeting will be guests of the council at the traditional buffet luncheon at the Cosmos Club. Wives of members of the staff of the council will act as hostesses.

The closing session of the twenty-first meeting on Saturday afternoon will include two papers. The first, "Schooling for Youth in the Light of Adult Education," will be read by Dorothy Canfield Fisher, the well-known writer. President Robert M. Hutchins, of the University of Chicago, will be the final speaker. Both Mrs. Fisher and President Hutchins are members of the American Youth Commission.

There will be opportunities for discussion from the floor throughout the meeting. The council will maintain an exhibit of publications and other materials related to its work at the Mayflower Hotel during the sessions.

THE RETIREMENT OF DR. JOHN W. WITHERS, DEAN OF THE SCHOOL OF EDUCATION, NEW YORK UNIVERSITY

DR. JOHN W. WITHERS, dean of the School of Education at New York University during the last seventeen years, will retire next September upon reaching the age of seventy.

Dean Withers has spent a lifetime in the service of American education. He first came into national prominence in 1914 when the Department of Superintendents of the National Education Association honored him by taking as a theme for its annual convention discussions the democratic method in curriculum reconstruction. Dr. Withers had evolved this method after considerable experimentation. It is still one of the most effective and practical means of reconstructing public school curricula to meet changing conditions in a democracy.

Again the genius of Dean Withers as an educational administrator was recognized when he became president of Harris Teachers College in St. Louis. This institution soon became the most outstanding college for the training of teachers in the country. In 1917 Dr. Withers was made superintendent of schools for the city of St. Louis. He was one of the first to recognize a need for educational sociology and to organize the early beginnings in this field. He also began the improvement which reorganized the old academic high school on a relatively new basis. His greatest contribution during this period, however, was the recognition of the need for a program and facilities for the education of men and women in service—people who had already completed their formal education and were earning a livelihood. Dr. Withers was one of the first to see that America was entering upon an era of rapidly accelerating change which made it necessary for people in ever increasing numbers to seek reeducation. No group in American society was more vitally affected by these changes in contemporary life than were the school teachers.

In 1921 the chancellor and the council of New York University called Dr. Withers from St. Louis to become dean of the University School of Pedagogy, which was then a relatively insignificant part of the university's activities. There were 141 students enrolled and four full-time members on the faculty. The income from student fees amounted to approximately $8,000. Immediately upon acceptance of the position, Dean Withers drew up a very comprehensive plan which was designed to enable the School of Pedagogy to meet adequately the present and future educational needs of public education in the eastern section of the United States. This program, a daring one for those times, was accepted by the chancellor and the council of the university. The name of the School of Pedagogy was changed to the School of Education and things began to grow. During the school year of 1936–37 there were in excess of 9,000

students enrolled, with an income from student fees which exceeded a million dollars. This growth has been due to a number of things, chief among which are the following:

1. Continued emphasis upon the things which had made Dr. Withers a national figure before his coming to New York University.

2. The organization of the Institute of Education as a department of the School of Education in 1922. This provided for the organization of courses in any community where the local needs could be met by university instruction. Regular faculty members left the School of Education for an afternoon or an evening and went out into the surrounding country to give help to the educators of the community. This work developed and grew so rapidly that in 1933 it was reorganized and placed under the Division of General Education and its scope enlarged to include the other colleges and schools of the university in rendering facilities for instruction and in-service education at off-campus centers throughout the eastern states.

3. Constant formal and informal surveys of changing conditions in public education. During the seventeen years of Dean Withers' direction of the School of Education at New York University he has participated in no less than eighteen surveys of educational needs and activities in the United States. These include surveys of the whole or significant parts of the states of Arkansas, Pennsylvania, Indiana (religious education), and city surveys for Philadelphia, Pittsburgh, Baltimore, Buffalo and New York City. This constant and vital contact with actual conditions in educational fields has enabled the School of Education to maintain its instruction on a highly practical level.

4. Another contributing factor to this remarkable development of the School of Education has been the personality of Dean Withers himself, which is characterized by three great traits: The capacity to see education constantly in its proper perspective with respect to the whole life activities of the individual and the nation; a sympathetic understanding of human beings; and a capacity to inspire men and women to the best efforts of which they are capable.

No account of this man's contributions to education and his successes as an educational leader will ever adequately express the appreciation which the students who have passed through the School of Education at New York University have for him and his work. Testimony to his genius exists in every state in the Union in the daily lives of teachers and school administrators who cherish his ideals and seek to emulate him in practice. Other tributes have come during his tenure of office as dean in the form of opportunities to serve elsewhere. One state university of national prominence vainly sought him on two different occasions as its president. To him, however, it was more fun and a greater contribution to develop something from a small beginning than it was to be president of something already mature. Age may have succeeded in luring him from the Deanship of the School of Education; it will never take him from an inspiring and joyous leadership in American education.

E. GEORGE PAYNE

EDUCATIONAL NOTES AND NEWS

DR. ARNAUD C. MARTS, acting president of Bucknell University, has accepted the presidency. He was urged to take the position by a petition signed by all the enrolled students, by the entire faculty and by the unanimous action of the board of trustees.

DR. JOHN WIRT DUNNING, for the past twenty-two years pastor of the First Presbyterian Church at Kalamazoo, Mich., announced his resignation on March 27 to become president of Alma College, Alma, Mich.

DR. F. G. CRAWFORD, a member of the faculty of Syracuse University for the past nineteen years, has been appointed dean of the College of Liberal Arts. He succeeds Dr. Karl C. Leebrick, who resigned to become president of Kent State University, Ohio.

MARK EISNER, a member of the Board of Higher Education for New York City for the past twelve years and its chairman for the last six, has resigned. Frank P. Walsh, labor attorney and chairman of the New York State Power Authority, has been appointed to fill the vacancy caused by the resignation of Mr. Eisner.

DR. RICHARD D. ALLEN, assistant superintendent of schools in Providence, R. I., has been appointed to serve the U. S. Office of Education on a part-time basis as expert consultant in guidance.

DR. HERD C. STEELE has been appointed dean of the department of science at the Mississippi Women's College, Hattiesburg.

AT Yale University, William Allen White, editor of the *Emporia Gazette*, will give the 1938 Daniel S. Lamont Memorial lecture. Dr. John Bell Condliffe, professor of commerce at the London School of Economics, has been appointed visiting lecturer on international relations during the second term of 1938–39 and will receive the Howland Memorial Prize, and Dr. Henry E. Sigerist, director of the Institute of the History of Medicine at the Johns Hopkins University, has been appointed Dwight H. Terry lecturer. His subject will be "Medicine and Human Welfare."

THE following changes have been made in the faculty of Northeastern University, Boston: Dr. Charles F. Barnason has been appointed full professor and chairman of the department of modern languages; Dr. Alfred D'Alessandro and Asa S. Knowles, associate professors, have become full professors, and Dr. Roger S. Hamilton has been appointed associate professor of economics.

DR. CARROLL D. CHAMPLIN, professor of education at the Pennsylvania State College, has been given leave of absence to conduct discussion programs for the Federal Forum Project under the auspices of the U. S. Office of Education.

ELLA MAY THORNTON has been appointed by Governor E. D. Rivers and confirmed by the Senate for a fourth four-year consecutive term as librarian of the State of Georgia. This is the first position to be filled under the Georgia Librarians' Certification Law, which became effective on January 1, 1938.

JAMES T. RUBY, formerly of the Library of Congress, has been appointed assistant professor of library science at the Simmons College School of Library Science, Boston.

DR. HAROLD A. BLAINE, professor of English at Adelbert College, Western Reserve University, and Mrs. Blaine, psychologist of the Child Guidance Clinic, have been awarded a double scholarship on the Launcelot Packer Foundation by the Cleveland Chapter of the English-Speaking Union.

DR. CHARLES F. REMER, professor of economics at the University of Michigan, has been granted leave of absence for a year to enable him to accept the directorship of the Research Center at Geneva, Switzerland.

SIR GRANVILLE BANTOCK, British composer and conductor and chairman of Trinity College for Music in London, has arrived in this country to conduct examinations in various parts of the United States for students who seek to qualify for Trinity College diplomas in music.

DR. E. K. MAPES, professor of Romance languages at the University of Iowa, has been appointed by the Mexican Government the official United States representative at the first International Conference on Latin-American Literature to be held in Mexico City from August 15 to 20.

MILTON B. TAYLOR has been appointed executive secretary of the Utah Education Association to fill the place left vacant by the resignation of B. A. Fowler.

DR. FELIX WEILL, chairman of the department of Romance languages at the College of the City of New York, has been made a member of the French Legion of Honor in recognition of his efforts to make the French language understood in foreign lands.

THE Agricultural Club of the College of Agriculture of the University of Missouri recently presented Dean F. B. Mumford with a plaque at its annual banquet in appreciation of his work with students and their organizations during the past twenty-nine years. Dean Mumford, who retires this summer, was the principal speaker at the banquet.

PROFESSOR LYMAN BRYSON, Teachers College, Columbia University, has been appointed chairman of a national committee to serve on an Adult Education Board for the Columbia Broadcasting System.

DR. WILLIAM K. CHANDLER, instructor of English at Harvard University, has been promoted to an assistant professorship.

MISS ELIZABETH BUTCHER, librarian of the George L. Pease Library of Ridgewood, was elected president of the New Jersey Library Association at the forty-second annual convention held at Atlantic City. She succeeds Leo R. Etzkorn.

DR. HAROLD GLENN MOULTON, president of the Brookings Institution, Washington, D. C., will give the commencement address at Goucher College on June 7.

DR. FRANK P. GRAHAM, president of the University of North Carolina, spoke at the close of the sixteenth annual conference of the Milbank Memorial Fund on March 31 at the New York Academy of Medicine.

DR. HENRY W. A. HANSON, president of Gettysburg College, Pa., spoke recently at the annual dinner and reunion of the New York-Gettysburg College Club, New York City.

MISS ALICE FLORER, formerly state superintendent of education for Nebraska, died on April 2 at the age of fifty-six years.

ALFRED W. ABRAMS until 1935 director of the visual instruction division of the New York State Department of Education, died on April 2 at the age of seventy-one years. He had served in the Department of Education for twenty-five years.

DR. EDWARD DELAVAN PERRY, professor emeritus of Greek at Columbia University and a member of the faculty for fifty-eight years, died on March 28 at the age of eighty-three years. He was the oldest member of the faculty. Dr. Perry served as dean of the faculty of philosophy from 1902 to 1909. He had been a member of the managing committee of the American School of Classical Studies in Athens, Greece.

THE ninth spring meeting of the Eastern Branch of the American Psychological Association was held under the auspices of New York University on Friday, April 1, at the Hotel Commodore, New York City, and on Saturday, April 2, at the University College of Arts at University Heights. A banquet was held at 7 o'clock on the evening of April 1, after which Professor Karl S. Lashley, of Harvard University, gave the presidential address. He spoke on the "Experimental Analysis of Instinctive Behavior."

MASSACHUSETTS STATE COLLEGE was for the tenth time the meeting place for the annual Conference of Elementary School Principals and Supervisors from March 30 to April 1. The conference was arranged under the direction of the State Department of Education.

A FUND of $140,952,766 would be provided for the exchange of students between the United States and Europe if the proposal by former President Hoover, in his speech on March 31 at New York, were adopted, according to an Associated Press dispatch. Mr. Hoover proposed that countries which owe this government relief debts be permitted to erase them by depositing in home banks money to finance a wholesale exchange of students and professors with the United States. Relief debtors are countries to which this nation extended aid and sold food and other supplies on credit after the World War. This it is said would obviate the difficulty of getting dollars to which objection has been made. Ten countries would be involved—Armenia (now part of Turkey), Austria (now part of Germany), Czechoslovakia, Estonia, Finland, Hungary, Latvia, Lithuania, Poland and Russia. The largest relief debtor is Poland, which received credits of nearly $76,000,000. Austria received $24,055,708. The only relief debtor which has consistently paid is Finland, which received a credit of $8,281,926.

A GRANT of $15,000 from the Alfred P. Sloan Foundation of New York to establish five graduate competitive fellowships for young industrial executives has been made to the Massachusetts Institute of Technology. These fellowships will cover twelve months of post-industrial study in the departments of business and engineering administration and economics and social science. Candidates should be between twenty-five and thirty-five years of age, and must have had at least five years industrial and executive experience of a quality which merits leave of absence by present employers. They must also have graduated with high academic standing in science or engineering from a college or university of recognized standing. Stipends range from $1,750 for single men to $2,750 for those who are married. Applications for the fellowships will close on April 25. The successful candidates will begin their course in June.

THE Board of Education of New York City has asked Governor Lehman to veto eighteen of the twenty bills affecting the New York City school system that were passed in the closing days of the legislature. Action disapproving these bills was taken by the law committee, headed by James Marshall, vice-president of the board. In the main, the committee contends these measures would place additional financial burdens upon the local school system. The board asked the Governor to sign the bill that would give employment certificates to minors with retarded mental development, under certain restrictions. The board also approved the bill that would protect the city against the financial loss that occurs whenever the legal Jewish holidays fall on week days. The money given by the state is computed on the actual attendance, which causes a loss of as much as $100,000 or more for certain holidays.

THE University of Buffalo will celebrate the twenty-fifth anniversary of the founding of its College of Arts and Sciences by holding an educational conference on May 14. The theme for the morning will be the Regents' Inquiry into the Character and Cost of Public Education in the State of New York, as it affects liberal arts colleges and secondary schools in the state. The speakers will be: Professor Francis T. Spaulding, of Harvard, who has been in charge of the secondary school survey in the inquiry, and John Lord O'Brian, of Buffalo, chairman of the Regents' Committee on Teacher Education. Discussion will follow. The afternoon session will be concerned with trends and tendencies in liberal arts education. The speakers, who will discuss "Past and Present" and "Present and Future," will be Raymond A. Kent, president of the University of Louisville, and Harlan H. Horner, associate commissioner in charge of higher education, University of the State of New York. The anniversary dinner will be held in the evening and will be addressed by Clarence S. Marsh, vice-president of the American Council on Education; Robert T. Bapst, superintendent of education, Buffalo, and Harry W. Rockwell, president of the Buffalo State Teachers College.

NEW COLLEGE, of Teachers College, Columbia University, is the only institution in the United States which requires foreign study of all its students. The chief purpose has not been the study of foreign languages, except for students majoring in language, but to acquaint the student with the civilization of the foreign country and, by means of comparison, to enable him better to understand his own country. During the past scholastic year fifty students of New College studied abroad and in the last four years twenty staff members have spent from three to ten months abroad in the service of the college.

ILLINOIS STATE NORMAL UNIVERSITY at Normal has adopted new entrance requirements. As a result of a committee investigation of thirty colleges and universities, academic entrance requirements in terms of specific subjects or fields have been abolished. The former requirements for entrance from high school were: three units in English; two units from each of two subjects included in the following fields: mathematics, foreign language, social science or natural science, and a sufficient number to make fifteen units from a choice of other subjects. The change in entrance requirements abolishes these specific requirements, making it possible for students to offer a greater variety of subjects. This move does not interfere with the plan of selective admission employed at Illinois State Normal University, but merely makes it possible for any student from an accredited high school to be admitted, provided he is not barred by selective admission.

ACCORDING to an announcement made by J. H. Sturdy, secretary of the Saskatchewan Teachers' Federation, at least 300 Saskatchewan rural schools will be "adopted" by classrooms or schools in Ontario with a view to supplying some of their most pressing needs. The plan is said to be receiving enthusiastic support. In addition to the "adoption" plan, the federation in the last fifteen months has distributed approximately $12,000 to more than 1,000 Saskatchewan teachers. The bulk of this money was contributed by Eastern teachers, though some of it came from the better-paid teachers in Saskatchewan and other Western provinces. Under the school adoption plan, the Saskatchewan organization was informed that fifty-seven schools recently received from Eastern Canada boxes

of supplies ranging from essential classroom material to clothing for the children and teachers. Other gifts had been forwarded previously. In distributing money contributions from other provinces, the first attention had been given to the needs of married teachers with children. Appeals for the money were based on need for transportation to and from schools, for clothing, glasses, medical or dental care and to replenish needed supplies. It is recognized that the aid given is entirely inadequate to meet the situation which has developed in Saskatchewan.

EDUCATIONAL authorities in the State of Rio Grande do Sol, Brazil, following the example of Santa Catharina, have taken over private schools conducted by German, Italian and Polish groups. According to *The New York Times* the reason given is that too much emphasis has been placed in these schools on the teaching of the languages, customs and history of foreign nations. Children born in Brazil of immigrant parents, it is stated, are Brazilians and must be educated as such. Reaction against the spread of foreign ideologies has been accentuated by the activities of the Cultural Propaganda Department of the German Embassy, especially since the Reich's absorption of Austria. Brazilians are said to have been especially aroused by Chancellor Adolf Hitler's declaration regarding German minorities abroad. To permit any foreign group in Brazil to be termed a minority, it is argued, would automatically give it quasi-political status, which the government is determined not to allow.

SHORTER ARTICLES AND DISCUSSION

A FACULTY-CENTERED ADMISSION PROGRAM

IN President Valentine's excellent article, "Policies of Admission,"[1] he emphasizes the fact that it is the function of the admission officer "to advise and help place each student as well as to admit him," speaks of the necessity of this officer acting "as a stimulus to his faculty," and points out that the admission office is "the most critical single point at which the educational ideals of the college can be made or broken."

The form of admissions organization of New Jersey College for Women (the undergraduate woman's college of Rutgers University) seems particularly well adapted to function in advising students, stimulating the faculty and furthering educational ideals. It is an organization which deliberately places faculty members and faculty points of view at the center of the admission procedure. The chairman of the faculty Committee on Admission and the Underclass Years, composed of five professors all actively engaged in freshman instruction, acts as executive head of the admission office. This emphasis is important; it is not the same thing as saying that the admissions executive serves as chairman of the board of admission. In addition to formulating policies of admission and recommending changes in admission regulations and requirements to the faculty and of passing on the acceptability of individual candidates for admission, the committee serves as a general supervisory committee for the first two years of the college course. It is responsible for guidance and advice to freshmen, for supervision of the freshman orientation program, for the coordination of the information available in the several personnel agencies of the college, for approval of individual exceptions to the curricular rules, and finally, for officially dropping from the rolls of the college those students adjudged to be incapable of handling college work successfully.

This plan of placing responsibility for the oversight of freshmen in the hands of the same group charged with determining admission policies has done much to emphasize the continuity of the educative process and to promote the adoption of the point of view of the "articulation" of secondary school and college. In dealing with freshman difficulties, for example, it is natural for the members of the committee to refer to the secondary school record for such light as it may throw upon the causes of the difficulty. Contact with the secondary school records and the problems revealed in the matters which come before the committee from the schools has in turn resulted in improved understanding of freshman difficulties and needs. It is salutary, too, that those who vote to admit an individual must also vote to drop her, if she is unsuccessful. The necessity of facing its own

[1] SCHOOL AND SOCIETY, December 25, 1937, p. 809.

mistakes has caused the committee to use admission criteria much more understandingly. All this undoubtedly means that educational ideals are being more consciously given consideration when the admission or rejection of a candidate is being determined.

Under this plan, there has grown up on the campus a group of faculty members who through service on this committee have come to sense understandingly the problems of secondary school and college relations, and these in turn have influenced faculty thinking. Much of the forward-looking legislation proposed to the faculty has developed from meetings of the Committee on Admission and the Underclass Years. At the present time, for instance, this committee is sponsoring faculty discussion of the curricular problems of the freshman year, particularly with reference to the significance and wisdom of the entrance requirements at present in force, and the relation of the curricular regulations to the entrance requirements. Similarly, legislation dealing with placement of students in foreign language courses on the basis of demonstrated performance in placement tests rather than on the basis of entrance units was sponsored by this committee a number of years ago. So has the admission office become genuinely a "stimulus to the faculty."

Originally there was assigned to the admission committee only the oversight of freshmen. Because the freshman and sophomore years are so naturally a unit distinct from the upper years, the faculty voted, after some five years' experience with the original plan, to assign the oversight of the sophomores also to the same committee. The implication was that each individual student would either have been developed to the point of being able to handle the more independent and concentrated work of the upper years successfully, or would have been dropped from college at or before the end of the first two years. This policy was definitely adopted by the committee, and has been so successfully executed that there are now practically no serious academic deficiencies among juniors or seniors.

The success of this plan of unified responsibility for admission, guidance and elimination is due in no small measure to the fact that it has been placed upon faculty members who profess not only a natural interest in obtaining good material and working with it, but an understanding of the point of view of their colleagues, and have thus been able to secure their whole-hearted cooperation in the guidance program, as well as to interpret to their colleagues in their own thought forms the essential elements of the problem of secondary school and college relations and the difficulties so often faced by the individual student in the transition from secondary school to college.

As an example of faculty approach, there is cited the committee's own statement of the aims of its post-admission program:

(1) To ascertain which students seem not capable of doing satisfactory college work.

(2) To ascertain which students seem poorly prepared in any subject, as an aid in selecting future entrants from the same high schools.

(3) To ascertain which students have special difficulties with one subject or type of subject, and, if possible, to correct the difficulty.

(4) To ascertain which students seem not to know how to study, and, as far as possible, to arrange for special training in methods and habits of study if these students seem otherwise capable.

(5) To ascertain which students seem capable of better work than they are doing (even though their present work be already satisfactory), and, as far as possible, to assist them in realizing the possibility of improvement and in effecting their improvement, if they so desire.

ALBERT E. MEDER, JR.
NEW JERSEY COLLEGE FOR WOMEN

A PURPOSEFUL COURSE

FIRST as a high-school principal, later as a college registrar and dean, I found careful study of a student's record an essential part of my work and probably the best basis for counseling as to his future course.

The program of studies followed by a student through school and college may be accounted for in three ways, *viz.*: (1) a totally required course as demanded by our earliest colleges; (2) an aggregation of largely unrelated courses selected almost at random—the "elective system" at its worst, whether in high school or college; (3) a combination of required work and elective courses so chosen as to accomplish a specific purpose.

Having been called upon recently to review the

school and college record of one of my own former students,[1] I was so impressed with the purposeful planning which his record evidenced from year to year that I pass it on for the encouragement and guidance of other high-school principals and college deans.

The school and college record of Frank Elliott Ball, of the Princeton Class of 1925, is an excellent example of the third type mentioned above—the purposeful course. A study of his record gives abundant evidence of his thoughtful planning, even in his preparatory school days, in preparation for the work which he was looking forward to accomplish.

Throughout his preparatory course in the Central High School of Muncie, Ind., at Brooks and at Lawrenceville, he studied English and entered Princeton with the usual three credits in English. In the university he continued this study through English 301, 302 in his junior year. Similarly, he completed four preparatory years of Latin and concluded this study with Latin 107, 108 in his freshman year at Princeton. Of French he studied one year each at Muncie high school, Brooks and Lawrenceville, and continued French through two years at Princeton.

Summarizing, we find that Frank completed in his language studies: seven *successive* years of English, five *successive* years of French and five *successive* years of Latin. Thus he was carrying out the principle which has lately been so properly emphasized. "The preparatory and college work done by a student is treated as a whole." Instead of losing time and effort by ill-chosen changes in his course, he had the advantage of increased momentum in each successive year. Opportunity was thus given for "growth," as urged by modern psychologists.

In mathematics, Frank passed examinations for entrance to Princeton for two credits in algebra studied in the Muncie high school and at Brooks, one and one-half credits in geometry studied at Muncie and at Lawrenceville and one-half credit in trigonometry studied at Lawrenceville. Frank's preparatory work in mathematics was followed by Physics 101, 102 at Princeton. This field in his course was required throughout—the mathematics for entrance and the physics for graduation at Princeton.

Passing now from the fields of language and mathematics, in both of which Princeton has always maintained significant requirements, we come upon subjects which Frank took of his own choice—evidence of his interest in taking those courses which should best accomplish his purpose. For example, his high-school courses in geography and community civics and a year's work in history at Lawrenceville were followed at Princeton by another year's work in history, a year of economics and double courses in "government" throughout his junior and senior years. An interest which Frank showed in his freshman year at high school proved to be his choice for advanced university study! This is another instance indicating his consistency of purpose and fine stability of character. The concluding illustration from his curriculum is military training—taken in his very first year of high school and throughout his university course. As a good citizen, Frank wanted to be prepared to render intelligent as well as loyal service.

Educational counselors face many, varied problems. But whenever we come upon a student with a study plan of his own, the problem of counseling is already half solved. And if, besides his plan, he has steadfastness of purpose, our rôle becomes the pleasant one of a spectator gratified over his young friend's increasing accomplishments. This student accepted the courses "required" by his school and college authorities as tasks to be performed as steps toward graduation. But he added to these required courses selections of his own which he thought most likely to prepare him for effective citizenship. The improvements that Frank Elliott Ball had effected in his city and state, even as a young man, are the best evidence that he had gotten out of his school and college course the preparation he desired for constructive citizenship. His was, obviously, "a purposeful course."

WENDELL S. BROOKS

NORTH PARK COLLEGE,
CHICAGO

[1] In preparation of a memorial volume.

PATTERNED RESPONSES TO THE EXAMINATION IN LIEU OF EQUIVALENT FORMS

DURING the fall quarter of 1936, a member of the Lincoln Memorial University faculty asked the writer the following question, "Is there some practical way to section students for examination

purposes without producing equivalent forms of the examination?" No satisfactory answer was given, yet the need was apparent and the problem soon took form. Each succeeding quarter since, actual classroom situations have been set up for experimental purposes to produce just such technique.

It has been the custom here for a number of years to administer psychological tests to the freshmen. The Otis Self-Administering Test of Mental Ability and the Sones-Harry High School Achievement Test furnished the basis for setting up control and experimental groups.

Students were divided into as many sections as desired, and each section was given a different response pattern. For example, a four letter pattern such as S N O W enabled the students to answer dual, triple and quadruple choice recognition examination questions. Two, three, then all four letters were substituted in the order of the usual answers to these types of tests. A similar response pattern is needed for each section desired. The experimental group was contrasted with the control group when the groups were subjected to the same examination in different rooms; and finally, when the experimental students were separated in a large auditorium, while the control group took the same examination under regular classroom conditions. The test scores of students in the regular education classes were used for the experiment.

The mean experimental score was 49.91, S.D. 7.53; and the mean control score was 49.84, S.D. 7.50, with no statistically reliable difference between them. A total of 46,594 experimental and 46,594 control responses were used in the experiment.

Criteria such as professional education test scores, college grades, high school achievement test scores, psychological test scores and high-school grades were correlated with the experimental and control results. The validity index was, r .51 P.E. .02 in the former and r .44 P.E. .02 in the latter. No significant difference was found between the experimental and control groups when correlated with the several criteria.

Summarizing briefly, there is no essential difference between patterned-response-sectioned examination scores and control test scores. The former will eliminate deception on examinations and appear consistently a little more valid than the control or ordinary classroom test results. As a mere observation this sectioning technique seems to encourage more independent effort, and protect the morally immature student against temptations he would probably be unable to bear.

HENRY F. DICKENSON
LINCOLN MEMORIAL UNIVERSITY

SPECIAL CORRESPONDENCE

STUDENT PRODUCTION OF A NEWS-REEL MOVIE RECORD OR PROPAGANDA FILM

ON November 24 a group of students of Adelbert College of Western Reserve University presented to the public a news release in color film, entitled "Western Reserve University." The story of this release is worthy of record.

The students who produced this film are members of the staff of the *Weekly Tribune,* a student newspaper. The members of the staff have felt for some time that it would be proper for them to present a motion picture news release, and this film is the first of a proposed series. This picture shows scenes of activities in the spring, such as the campus day carnival and commencement. Pictures from the summer include a series from the Western Reserve University Building at the Cleveland Exposition; and some scenes from freshman week in September, football games and other fall student events bring the picture up to date.

The process by which this film was produced is a very interesting one in that it has taken advantage of student enterprise to arrange for a group of students the equivalent of a course in cinematography, and to initiate them with a minimum of effort on the part of the faculty into all the problems which have to do with the production of a film.

The production of a film ordinarily consists of three parts. The first is planning the scenario and writing the script, that is, planning the picture as a whole. The second part is taking the pictures, which includes laying out the scenes, planning the angle of shooting, manipulation of the camera with light meter, filters and the various kinds of lenses, rehearsing the scenes in

which different persons appear and the actual photography. The third part consists of reviewing the pictures taken, reconciling them with the script or scenario, arranging them in order and writing the titles. After the titles are written they must be cut into the film continuity, which is the final act of editing.

In the making of this particular film it was necessary to begin with the second process, because the students had had no experience with planning the film, and because their proposals covered to a certain extent another proposed film, for which about 500 feet of colored film had been taken. These pictures were turned over to the students. They were told that they might use the pictures if they could put them together into the kind of reel which they wished to produce. Instruction was offered in the matter of studying the film, locating the various scenes, then writing an *ex post facto* scenario and proceeding as if the film had been run according to their plan and script.

The group of students, of whom at first there were four or five, grew to eight. They worked faithfully, on one day keeping at the projecting, note taking and script writing for eleven hours at a stretch. Since most of these students had never handled a projector before, the experience was not only novel and fascinating, but very instructive and practical. They produced a 1,000-foot reel of a quality that would do credit to an expert.

It will be recalled, of course, that the students did not actually take the pictures. They are very eager, however, to tackle this problem, but understand that they should begin for their next release at the beginning by writing and planning a script or scenario. This they will do again with the help of Dr. Bliss, of the Cinema Laboratory of Western Reserve University. Dean Trautman, who helped to plan the first scenario, will also assist Dr. Bliss and the students in planning their next release from the point of view of public interest and importance to the university.

When the students have planned their next release, written the scenario, taken the pictures and edited the film, they will have a good course in motion picture producing, which should prove a very valuable addition to their skill equipment. It will train them not only in the whole business of producing a film, for instance, as a part of their professional work or as a hobby, but will certainly increase their appreciation, critical standards and enjoyment of the motion picture industry as a whole.

If students and faculty could cooperate in all their courses according to the procedure which has been established in the production of this film, with such actually profitable and practical purposes in view, what a different place college would be.

W. D. TRAUTMAN
WESTERN RESERVE UNIVERSITY

REPORTS

REGARDING A STUDY OF THE SCIENCES FOR GENERAL COLLEGE EDUCATION

DURING recent years studies have been made of the contents, methods and results of certain sciences used as part of college education. These studies, which were limited to special science subjects, made it clear that there is needed a comprehensive investigation which shall include all the major sciences used for general education.

During the meetings of the American Association for the Advancement of Science at Indianapolis, December 27, 1937, to January 1, 1938, the executive committee and council passed the following resolution: "The council voted to direct its standing Committee on the Place of Science in Education to represent the association in the organization of plans for the evaluation and improvement of the teaching of science in colleges."

A committee that is representative of the sciences now offered in the colleges as a part of general education is to be organized. The individual members will be selected from among those college teachers who are known for their scientific achievements and for their interest in improving teaching. Tentatively, the committee is known as the Committee on Improvement of Science in General Education.

The work suggested to the Committee on Im-

provement of Science in General Education is roughly outlined in the following sections of this memorandum. It is understood that this committee, when organized, shall further define its purposes and procedures, and shall be responsible for the supervision and conduct of its work. Constructive suggestions are welcomed from any source.

PROPOSED FUNCTIONS OF THE COMMITTEE ON IMPROVEMENT OF SCIENCE IN GENERAL EDUCATION

General: To initiate, encourage, guide and support studies designed to explore, evaluate and improve the teaching of the sciences as a part of general education.

Specific: 1. To clarify and define the problems involved in teaching the sciences as a part of the program of general education.

2. To develop a more scientific attack upon problems of science teaching; that is, to promote experimentation; to collect evidence, to encourage the use of procedures justified on the basis of organized and evaluated evidence in contrast to opinions, untested assumptions, and uncritical acceptance of traditional practices.

3. To disseminate information about the committee's work, and to secure constructive criticism by means of discussion groups in college and university centers, by participation in programs, and by such other means as may be found effective.

4. To obtain and to use financial support for such work in the sciences as gives promise of being effective in improving the teaching of science in general education.

5. To serve as a clearing house for coordinating the activities of the several agencies now working on parts of the whole problem, and new agencies which may be initiated for the improvement of science teaching.

6. To act in an advisory capacity on any studies approved by it and supported through it; to require and coordinate reports of such studies; and to provide for publication of the findings.

Meetings of available members of the Committee on the Place of Science in Education were held in Indianapolis on December 30 and 31, 1937. A third meeting was held in Washington, D. C., February 20, 1938. Also, correspondence between committee members has helped to formulate this memorandum. The following statements as guides have been formulated:

1. The Committee on Improvement of Science in General Education should include outstanding scientists and college teachers who have a deep interest in general education, who have had successful experience with science at various levels, and who are able and willing to devote considerable thought and effort to the project.

2. The Committee on the Place of Science in Education should undertake to learn who are regarded as probably useful members of the proposed new committee. The Committee on Improvement of Science in General Education in its early stages should not be large, and may add to its own membership as it finds desirable, and as approved by the Executive Committee of the American Association for the Advancement of Science.

3. It is proposed that the Committee on the Place of Science in Education shall attempt to secure funds to support the preliminary meetings of the Committee on Improvement of Science in General Education, to employ a worker to serve under guidance by the committee, and to cover the cost of exploring the project in order to formulate a comprehensive statement of the problems which should be attacked.

4. It is expected that the Committee on Improvement of Science in General Education will prepare its plans, and will request additional adequate funds for conduct of its work over a sufficient period of time to provide fundamentally significant results. Any funds granted for the work of the committee shall be disbursed by the permanent secretary of the American Association for the Advancement of Science on orders issued and signed by the proper officer of the Committee on Improvement of Science in General Education.

5. It is the intention that, at the beginning, two persons will be named from each of the subject divisions. As soon as funds are available for the initial work of the proposed committee, the Committee on Place of Science in Education will proceed to enlistment of the initial members of the proposed Committee on Improvement of Science in General Education. These members will be asked to hold a meeting for organization and planning. Part or all of the members of the Committee on the Place of Science in Education will attend the first session of the first meeting of the Committee on Improvement of Science in General Education. Thereafter the new committee will proceed according to its own plans.

The members of the Committee on the Place of Science in Education are: Otis W. Caldwell, *chairman;* general secretary, American

Association for the Advancement of Science, Boyce Thompson Institute, Yonkers, N. Y. (temporary address—Atlanta University, Atlanta, Ga.); Karl T. Compton, Massachusetts Institute of Technology; W. L. Eikenberry, State Teachers College, Trenton, N. J.; Jerome Isenbarger, Wright City Junior College, Chicago; Burton E. Livingston, the Johns Hopkins University; Morris Meister, Haaren High School, New York, N. Y.; F. R. Moulton, Smithsonian Institution Building, Washington, D. C.; Ralph Tyler, the Ohio State University.

EDUCATIONAL RESEARCH AND STATISTICS

TRENDS IN COURSE SELECTION AT THE UNIVERSITY OF PITTSBURGH

PROPORTIONATELY, registration in science classes has remained remarkably constant over a period of seventeen years in the college of the University of Pittsburgh. Strong gains made by the social sciences meanwhile have been realized at the expense of the humanities.

Departments in the college are grouped into three distribution fields in lieu of vertical divisions. Records of registration by course have been kept by the registrar since 1921. Registrations in Field C, the natural, physical and formal sciences,[1] began at a level of 37.9 per cent. of all college registrations, only mounted as high as 42.3 per cent., fell as low as 37.1 per cent. and ended .7 per cent. above where they started. In this same period, registrations in Field A, the humanities,[2] declined and in Field B, the social sciences,[3] increased. Conversely, partial recovery made at times by the humanities was at the expense of the social sciences, with a few minor exceptions. In 1921, Field A enjoyed 40.4 per cent. of all course registrations. This percentage declined to a low of 29.1 per cent. in 1936 and recovered to 31.7 per cent. in 1937. Registration in Field B started at a low of 21.7 per cent. in 1921 and increased consistently to 32.1 per cent. in 1935, then declined to 29.7 per cent. in 1937. Within shorter periods of time, the following trends are observed.

[1] Includes astronomy, biology (botany, zoology), chemistry, geology, geography, logic, mathematics, physics, psychology, survey of the sciences.

[2] Includes classics (Greek, Latin), English (including journalism, speech), fine arts, modern language (French, German, Italian, Spanish), music appreciation, philosophy, survey of English, survey of fine arts.

[3] Includes economics, history, history of religion, political science, sociology, social work, survey of social science.

Prior to the pre-depression peak, sciences and social sciences tended to increase at the expense of the humanities.

In a period beginning with the highest pre-depression registrations of 1930 and continuing to the period of lowest registrations of the depression in 1933, enrolments in both social sciences and humanities tended to increase at the expense of the sciences.

Beginning at the low point of depression registrations and continuing until 1936, there was a tendency for registrations in the sciences and social sciences to increase again at the expense of the humanities.

From 1936 to 1937, the humanities made a strong gain at the expense of the social sciences.

The accompanying graph records these trends in college enrolment. In speaking of "course registrations" reference is made to the registration of students in particular classes, rather than their enrolment in the college itself. Figures given are for first semesters only. They include registration in both day and evening classes and in graduate courses taught by members of the college faculty. Registrations in orientation, physical education and military science are not counted. At the highest "pre-depression" level, marked by a vertical line, there were 16,841 course registrations in that first semester. It is common knowledge that depression influences were delayed in their action upon college enrolment. At the low point of depression enrolment marked by the second vertical line there were 13,625 course registrations. In the fall semester of 1937 the total was 17,783.

At the University of Pittsburgh, college classes include students[4] from the schools of business administration, engineering, mines, education

[4] Also enrolled in college classes are students in pre-medicine and pre-dentistry.

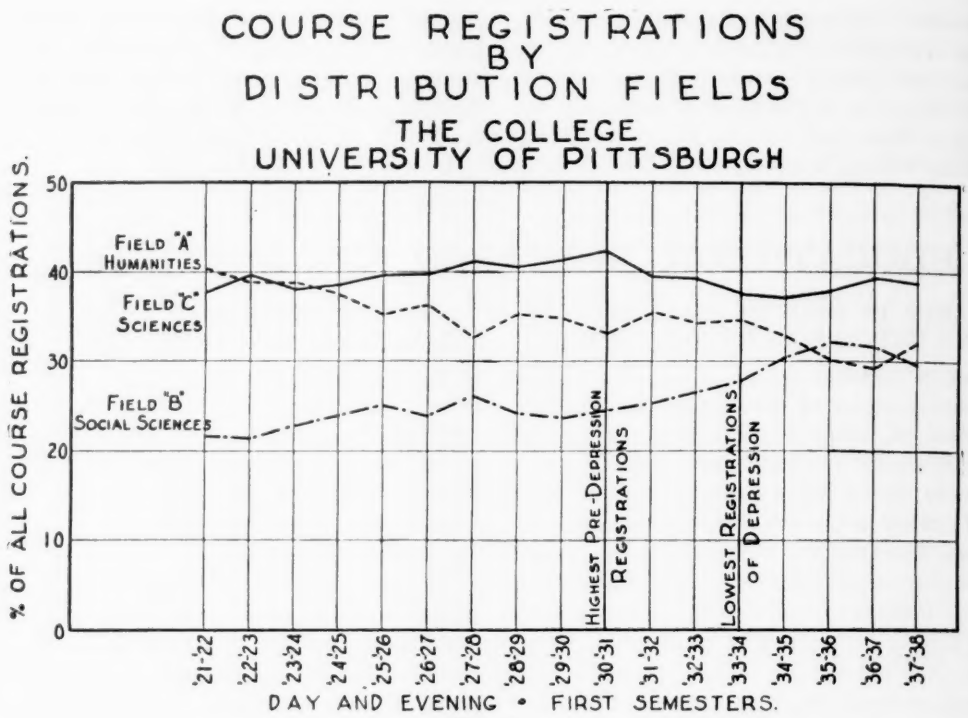

FIG. 1

and pharmacy in typical college subjects, such as English, psychology, modern language, mathematics, physics, chemistry, biology and history. Figures given for the social science field include registrations in the department of economics, a part of the school of business administration.

It is recognized that a complete study would evaluate many qualifying factors. New departments have been formed from time to time, while others have been merged. For a while, a few subjects like mathematics and psychology were counted in the two Fields A and C. The language requirements have been relaxed somewhat and a few other course requirements have been changed. The registration figures might have more meaning if they were weighted on the basis of the number of credits represented by each course. However, at all times, most of the courses were elective, and the number of registrations was very large. It seems likely that making allowance for these factors would not greatly modify the main trends described. Their effect is recognized in some of the minor fluctuations. The essential fact remains that at various times the students distributed their courses among the three broad fields in the proportions indicated.

It appears that there is now a rather good balance in enrolment between the three fields, each having roughly one third of all registrations. The sciences have only slightly more than their share. There are not many published reports which afford the opportunity of direct comparison. It would be interesting to learn from similar studies at other schools whether in the years cited these trends are typical of institutions located in industrial areas or of urban institutions or of large institutions regardless of their location.

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